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RESEARCH DEPARTMENT

The service area of the Morecambe Bay television transmitter

REPORT No. K-167

1963/54

**THE BRITISH BROADCASTING CORPORATION
ENGINEERING DIVISION**

RESEARCH DEPARTMENT

**THE SERVICE AREA OF THE MORECAMBE BAY
TELEVISION TRANSMITTER**

Report No. K-167

(1963/54)

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THE SERVICE AREA OF THE MORECAMBE BAY TELEVISION TRANSMITTER

SUBJECT

The results of a field strength survey of the Morecambe Bay television transmitter are given in this report.

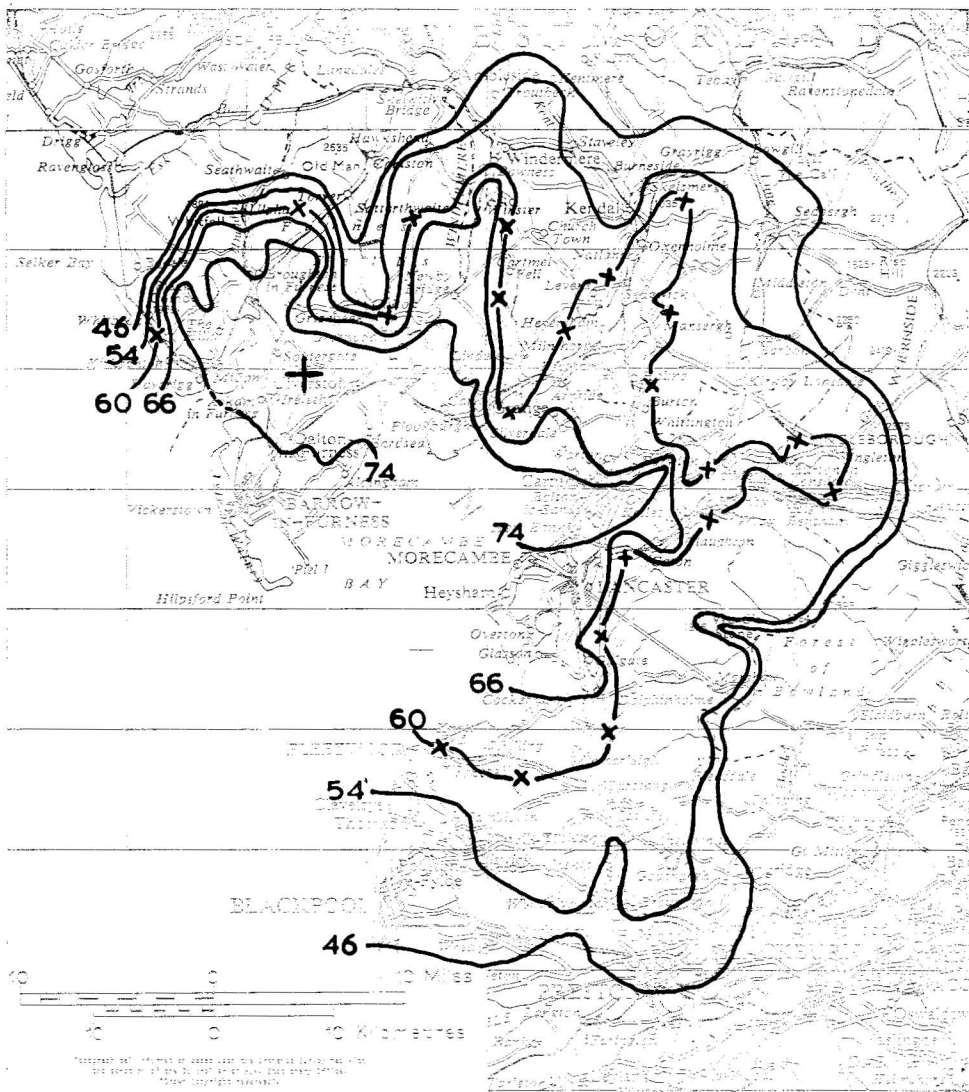
1. SUMMARIZED DESCRIPTION OF TRANSMITTER

Band	I
Channel	3
Frequencies	Vision: 56.733125 Mc/s Sound: 53.233125 Mc/s
Site height (above mean sea level)	850 ft (254 m)
Aerial height (above ground level)	198 ft (61 m)
Transmitter power	Two units, each of 0.5 kW underrun at 0.45 kW
Aerial	Eight tiers of tangential dipoles (dissimilar tiers)
E.R.P.	0.2-5.15 kW
Polarization	Horizontal
H.R.P.	See Map T.581

2. SURVEY RESULTS

Map T.581 shows the field strength contours for the Morecambe Bay television transmitter.

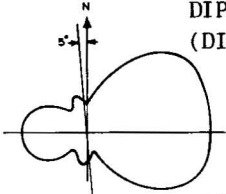
The values of field strength exceeded at 10%, 50% and 90% of the locations in towns and villages measured are given in the Appendix.



Map T.581 - MORECAMBE BAY

Band I Channel 3

SITE HEIGHT:	850 ft (254 m) a.m.s.l.	AERIAL:	EIGHT TIERS TANGENTIAL DIPOLES.
AERIAL HEIGHT:	198 ft (61 m) a.g.l.		(DISSIMILAR TIERS)
E.R.P.:	0.2 - 5.15 kW		
POLARIZATION:	HORIZONTAL		



H.R.P.:	DIRECTIONAL	H.R.P.:	RESEARCH DEPARTMENT TECHNICAL MEMORANDUM NO. E-1078
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NOTES

1. The contours represent the field strength in decibels (dB) relative to $1 \mu\text{V/m}$ at 30 ft (9.1 m) above ground exceeded at 50% of receiving sites in a given locality. The value exceeded at 90% of receiving sites may be as much as 10 dB below the value indicated by the contours, particularly in hilly and built-up areas.
2. —x—x—x— Limit of service area free from perceptible co-channel interference from all U.K. co-channel transmitters for 90% of the time based on a protection ratio of 45 dB with a reduction of 10 dB for cross polarization and 10 dB for frequency offsets, allowance being made for receiving aerial directivity.

3. COMMENTS ON SERVICE

Until the Morecambe Bay television transmitter came into service on 3rd December 1962, viewers situated in the Morecambe Bay area were provided with a poor service from Holme Moss. Not only is the Holme Moss signal weak, but, especially during the summer months, it is subject to severe co-channel interference from Continental television transmissions. The principal towns which benefit from the Morecambe Bay transmissions are Morecambe and Heysham, Lancaster, Barrow-in-Furness, Ulverston, and Windermere and Bowness. With the exception of Windermere and Bowness (median field strength 58 dB(μ V/m)), all of these towns receive a median field strength at least 6 dB in excess of 60 dB(μ V/m), the value protected against co-channel interference for 90% of the time.

APPENDIX

Town	Field Strength (dB(μ V/m)) for Stated Percentage Locations		
	10%	50%	90%
Ambleside	45	38	35
Arkhholme	60	53	47
Arnside	72	63	58
Askam in Furness	97	91	80
Barbon	60	58	54
Bardsea	83	77	70
Barrow-in-Furness	72	66	61
Barton	57	54	48
Baycliff	63	61	57
Black Barrow	87	77	63
Blackpool and Cleveleys	52	46	40
Bolton-le-Sands	82	78	72
Borwick	73	68	63
Bowness (see Windermere)			
Brookhouse	75	67	60
Broughton	56	54	52
Broughton in Furness	83	73	66
Burton	71	66	61
Burton in Lonsdale	67	59	54
Carnforth	76	73	65
Cartmel	76	71	65
Casterton	60	56	53
Catterall	60	58	56
Church Town	61	58	57
Cloughton	65	62	58
Coniston	41	37	34
Dalton-in-Furness	88	78	71
Duncombe	53	51	46
Ellel	66	63	58
Elswick	56	54	53
End Moor	65	54	50
Farleton	71	65	61
Fleetwood	60	55	52
Galgate	68	65	56
Garstang	64	59	54
Glasson	69	67	63
Gleaston	58	55	52
Grange over Sands	64	54	49
Great Eccleston	58	55	53

Town	Field Strength (dB(μ V/m)) for Stated Percentage Locations		
	10%	50%	90%
Halton	67	64	58
Hambleton	53	50	47
Heversham	82	71	66
Heysham (see Morecambe)			
High Bentham	66	58	53
Holme	66	60	55
Ingleton	70	64	58
Inskip	55	53	50
Kendal	54	44	39
Kirkby Lonsdale	49	42	36
Kirkham	57	47	44
Lancaster	79	71	66
Leece	63	59	55
Lindale	44	40	36
Lindale in Furness	78	75	69
Longridge	61	52	48
Lower Bentham	61	57	50
Lytham St. Annes	55	42	39
Millom	90	87	81
Milnthorpe	74	65	60
Morecambe Bay and Heysham	75	70	66
Natland	64	59	55
Over Kellet	85	79	75
Oxenholme	68	63	59
Pilling	64	60	58
Poulton-le-Fylde	54	51	49
Preston	52	47	42
Priest Hutton	74	68	66
Sandside	86	78	60
Scales	85	81	75
Sedbergh	58	52	46
Silverdale	80	73	67
Slyne	83	80	75
Stalmine	59	54	49
Staverley	48	38	36
Thornton	53	50	46
Troutbeck	47	39	36
Turnstall	63	61	58

Town	Field Strength (dB(μ V/m)) for Stated Percentage Locations		
	10%	50%	90%
Ulverston	91	82	74
Wennington	63	59	54
Whittington	54	48	44
Windermere and Bowness	62	58	54
Wray	65	61	55
Wrea Green	48	45	40

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